

BB. CALYPTRA MITRATE OR CONICAL.

C. CAPSULE IMMERSED, CYLINDRICAL.

D. Costate.

E. Entire.

F. Acuminate.

Grimmia.

CC. CAPSULE IMMERSED SPHERICAL.

D. Ecostate.

E. Entire.

F. Acute.

Hedwigia albicans.

CCC. CAPSULE SQUARE OR ANGLED.

D. Costate.

E. Serrate.

F. Acute.

Polytrichum.

CCCC. CAPSULE CYLINDRIC, EXSERTED.

D. Costate.

E. Entire.

F. Acute.

Ulota americana.

CCCCC. CAPSULE URN SHAPED, EXSERTED.

D. Costate.

E. Serrate.

F. Acute.

*Physcomitrium turbinatum.**(To be continued)*A NEW SPECIES OF METZGERIA FROM THE
GALAPAGOS ISLANDS*

BY ALEXANDER W. EVANS

The collection of Hepaticae made in the Galapagos Islands by Dr. Alban Stewart, while acting as botanist to the Expedition of the California Academy of Sciences, includes between fifteen and twenty species. One of the most interesting of these is the *Metzgeria* described below. It is not only a distinct addition to the genus but it apparently represents the first member of the Metzgeriaceae (Jungermanniales anacrogynae) to be reported from this group of islands.

* Contribution from the Osborn Botanical Laboratory.

Metzgeria grandiflora sp. nov.

Whitish or yellowish green, becoming brownish with age, growing in tufts: thallus spreading more or less from the substratum, apparently pendulous, dichotomous, well-developed branches mostly 1–1.5 mm. wide when explanate and 3–6 mm. long between the forks, strongly convex, the margins almost meeting ventrally; costa bounded both dorsally and ventrally by two rows of cortical cells; wings about fifteen cells wide, the cells similar throughout, with slightly thickened walls and minute, scarcely evident trigones, averaging about $45 \times 35 \mu$; hairs scattered, restricted to the margin, sometimes truly marginal, sometimes slightly displaced to the ventral surface, occurring singly, rarely more than 60μ long and often much shorter, straight or nearly so, thick-walled: inflorescence dioicous: female branch much longer than is usual in the genus, sometimes attaining a length of 0.8 mm.; central portion several cells thick but without a distinct costa, strongly concave dorsally; wings reniform, about 0.4 mm. wide, more or less pressed together, one cell thick; hairs marginal, scattered, usually occurring singly, rarely in pairs, similar to those of the thallus but often longer and sometimes attaining a length of 150μ ; archegonia numerous: male branch strongly curved and inflated, elliptical in outline, about 0.6 mm. long and 0.4 mm. wide, delicate in texture, without hairs; costa distinct; antheridia numerous: calyptra and sporophyte not seen [FIGS. 1–5].

On bushes and trees. Chatham Island, February 23, 1906, *A. Stewart* 2785, 2786; Abingdon Island, September 19, 1906, *A. Stewart* 8524. No. 2785, a portion of which is deposited in the herbarium of Yale University, may be designated the type of the species; No. 2786 is mixed with *Frullania aculeata* Tayl. and a sterile *Plagiochila*; No. 8524 is mixed with a sterile *Frullania*, apparently referable to *F. brasiliensis* Raddi.

The female branches in *M. grandiflora* (FIGS. 3, 4) are unusually large and yield some of the most distinctive characters of the species. In most members of the genus these branches are small and obcordate, the dorsal surface is plane or nearly so, the archegonia are borne in a small cluster, and the hairs are often scattered over the ventral surface. In *M. grandiflora* the dorsal surface in the median portion is so strongly concave that the wings are almost pressed together, and it is only with difficulty that they can be flattened out in one plane; the wings are reniform and

rounded at each end, the archegonia are borne in a large cluster, and the hairs are restricted to the margin. The male branches likewise (FIG. 5) are considerably longer than is usual in the genus but they are typical in other respects. No gemmae were observed in the material examined.

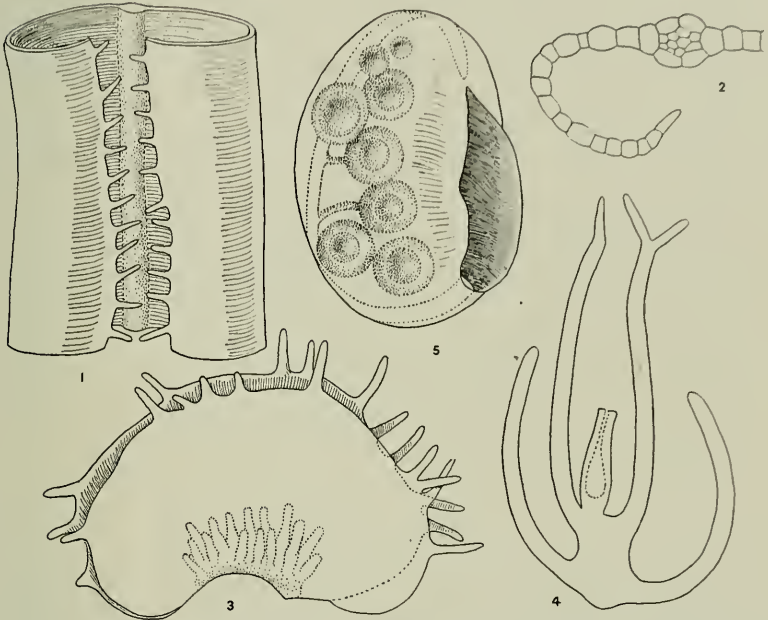


FIG. 1. *METZGERIA GRANDIFLORA* Evans. Portion of thallus, ventral view, $\times 50$. FIG. 2. Cross section of costa and wing, $\times 60$. FIG. 3. Female branch, $\times 50$. FIG. 4. Section through thallus and female branch, the wing on the left showing one marginal hair, that on the right showing two, $\times 50$. FIG. 5. Male branch, $\times 50$. FIGS. 1-4 were drawn from the type specimen; FIG. 5, from No. 8524.

The characters of the thallus (FIGS. 1, 2), which should be especially emphasized, are the following: the strong convexity, the cortical cells of the costa in two rows both dorsally and ventrally, the presence of hairs along the margins of the wings, and the lack of hairs on the costa and on the surfaces of the wings. In the first volume of his *Species Hepaticarum** Stephani recognizes three species of *Metzgeria* with hairs restricted to the

* Bull. Herb. Boissier 7: 939. 1899.

margins of the wings and with a costa of the type found in *M. grandiflora*. These species are *M. comata* Steph. (of New Caledonia); *M. glaberrima* Steph. (of Chile, Patagonia, New Zealand and Australia), and *M. sinuata* Loitles. (of Peru). The first and third of these are known to the writer from description only. In *M. comata* the plants are epiphyllous, the thallus is plane, and the cells of the wings are unusually large, measuring $126 \times 54 \mu$ according to the description. In *M. glaberrima* the thallus is plane and is often naked throughout, even marginal hairs being absent; the female branch, moreover, bears surface hairs, as is usual in the genus. In *M. sinuata*, which is known only from the original material, the thallus is strongly convex as in *M. grandiflora*, but the wings are often thirty-five cells wide, the hairs are 150μ long, and the margin is described as being deeply sinuate or, rather, interruptedly recurved, a condition which is apparently never duplicated by *M. grandiflora*. Unfortunately *M. sinuata* was described from sterile material, and there may be difficulty in recognizing it again.

SHEFFIELD SCIENTIFIC SCHOOL,
YALE UNIVERSITY

SHORTER NOTES.

A NEW PHACELIA FROM COLORADO.—*Phacelia denticulata* sp. nov. Annual, the stem one to three dm. or more high, sometimes branching from near the base, pubescent and somewhat viscid-glandular; the leaves broadly linear in outline, five to six cm. long including the petiole, one and one half to two cm. wide, the small plants having smaller leaves, the lower part divided, the upper part pinnatifid, hispid pubescent on both surfaces; the inflorescence scorpoid and of several branches on the larger plants, the longer ones becoming four to six cm. long in fruit; the calyx lobes linear, obtuse, hispid and minutely glandular; the corolla blue or bluish, about five mm. long, the lobes denticulate, the stamens and style included; the seed capsule becoming five or six mm. long, equaled by the calyx lobes, four seeded, the seeds oblong, four mm. long, and lightly faveolate.

Phacelia denticulata belongs with *P. glandulosa* Nutt. and *P. Neo-Mexicana* Thurber; the leaves are like those of the former, but the flowers are nearer those of the latter. Dr. Gray, in the